Manitoba Agriculture

Guidelines For Estimating

Swine Farrow-Wean to 5 kg Costs

Based On 3000 Sows, 65595 Pigs Sold

formation Update

Date: June, 2001

This publication is intended to provide a format and a guide for determining the production costs of a large scale hog operation; this budget is based on a 3000 sow farrow wean to 5 kg enterprise. This operation is intended to represent the first stage of a three stage pork production system. The figures in the budget are estimates of production costs based on recommended practices and individual producer records. They were not obtained from an actual survey of the hog industry in Manitoba.

Accurate, up-to-date, production and financial records are essential for the effective application of these guidelines to an individual operation. Without such information, accurate cost of production projections cannot be determined.

Adjustments will be necessary when applying these figures to your own enterprise. The assumptions on which the costs are based are outlined in the supporting pages. These assumptions were arrived at using the breeding stock, management practices, and facilities seen in modern, well-managed swine operations of comparable size in Manitoba.

3000 Sow Farrow-Wean to 5 kg Pig Cost of Production

The following farrow wean cost of production budget is based on the assumption that all feed is purchased.

The budget also includes a land investment cost based on the assumption that 800 acres would be required for manure disposal for this size of operation, with 760 acres being rented out. Therefore land costs allocated to the swine operation would be 40 acres @ $500/acre or $20,000.

If developing a cost of production budget to include home mixed rations, the following items should be added to the budget:

- additional equipment costs associated with a mix mill;
- additional bins for different ingredients;
- additional labour for feed preparation.

The rations illustrated in this budget are examples only. Producers should consult a nutritionist to ensure that there unique farm and herd factors are taken into account.

The Manitoba pork production industry profile is changing and this budget was specifically designed to address the need of producers who may want to analyze the cost of starting up or switching to a farrow wean 5 kg operation. Several companies are offering contracts with varying levels of guarantees. Producers need to accurately calculate their costs before they can properly make a decision.

3000 Sow Farrow-Wean 5kg Cost of Production Summary

Operating Costs	$/Pig Sold	$/Sow	Total Cost	Your Cost
1. Feed Costs:				
1.01 Sow Lactation Ration	2.65	57.96	173,827	
1.02 Sow Gestation Ration	6.79	148.44	445,224	
1.03 Boar Ration	0.06	1.31	3,936	
1.04 Creep Feed	1.13	24.71	74,122	
Total Feed Cost	**$10.63**	**$232.42**	**$697,109**	
2. Other Operating Costs:				
2.01 Veterinary Medicine & Supplies:	1.33	29.09	87,241	
2.02 Maintenance & Repairs	0.30	6.56	19,679	
2.03 Hydro & Propane	1.22	26.67	80,000	
2.04 Insurance	0.58	12.76	38,277	
2.05 Manure Costs	0.75	16.46	49,357	
2.06 Office Supplies	0.05	1.09	3,280	
2.07 Marketing & Transport.	0.10	2.19	6,560	
2.08 Breeding Costs	1.20	26.16	78,462	
2.09 Sow Replacement	4.43	96.88	290,586	
2.10 Boar Replacement	0.14	3.08	9,236	
2.11 Property Tax	0.46	10.00	30,000	
Subtotal Operating Costs	21.19	463.36	1,389,787	
2.12 Interest on Operating Costs	0.38	8.38	25,136	
Total Operating Costs	**$21.57**	**$471.74**	**$1,414,923**	
Fixed Costs				
3. Depreciation:				
3.01 Buildings & Manure Storage	1.62	35.43	106,264	
3.02 Equipment	1.84	40.24	120,695	
Total Depreciation Cost	**$3.46**	**$75.67**	**$226,959**	
4. Investment:				
4.01 Land Cost	0.02	0.44	1,312	
4.02 Buildings & Manure Storage	0.98	21.43	64,283	
4.03 Equipment	0.56	12.25	36,733	
4.04 Breeding Herd	0.82	17.93	53,788	
Total Investment Cost	**$2.38**	**$52.05**	**$156,116**	
Total Fixed Costs	**$5.84**	**$127.72**	**$383,075**	
5. Labour				
Wages, benefits and hired manager	3.80	83.11	249,261	
Total Cost of Production	**$31.21**	**$682.57**	**$2,047,259**	

3000 Farrow to 5 kg Pig Production Costs

1. This input table outlines the production assumptions used.
2. Buildings and equipment are valued at new cost.
3. Manure haulage is contracted out.
4. Gilts are purchased for herd replacement.

Indicators of Productivity

Sows	**3,000**
Boars	**20**
Litters/Sow/Year	**2.35**
Average Weaning Age (days)	**18**
Average Born Alive per Litter	**10.90**
Percent Pre-Weaning Mortality	**12.0**
Percent Post-Weaning Culls	**3.0**

Herd Profile	**Total**	**/Sow**	**/Litter**	**%Mortality**
Sows	3,000			
Boars	20			
Litters	7,050	2.35		
Pigs Born Alive	76,845	25.62	10.90	
Pigs Died, Pre-Weaning	9,221	3.07	1.31	12.0
Pigs Weaned	67,624	22.54	9.59	
Pigs Culled	2,029	0.68	0.29	3.0
Weaner Pigs Sold	65,595	21.87	9.30	

Feed Requirements and Costs			**Purchased $/tonne**	**Home-Mixed $/tonne**
Dry Sow Ration	**2.3**	kg/day	**$200.00**	$0.00
Nursing Sow Ration	**6.0**	kg/day	**$228.00**	$0.00
Boar Ration	**2.5**	kg/day	**$200.00**	$0.00
Creep Feed	**1.0**	kg/pig	**$962.00**	$0.00

Labour

Total Hours per 7-day week	**400.0**	hours/week
Wage (includes benefits & hired manager)	**$12.00**	/hour

Sow Barn Capital Investment

					Your Cost
Buildings	**Sq.Ft.** [1]	**$/Sq.Ft.**	**Total**	**/Sow**	
Building Infastructure	87,000	**$25.00**	$2,175,000	$725.00	
Office & Loading	**2,500**	**$30.00**	75,000	$25.00	
Standby Generator			**25,000**	$8.33	
Feed Mill (building only)			**0.00**	$0.00	
Total Building Cost			**$2,275,000**	**$758.33**	
Equipment					
Pen, feeding & water systems		**$15.25**	$1,326,750	$442.25	
Fire Alarm System			**$4,000**	$1.33	
Feed Bins (10 bins)			**$10,000**	$3.33	
Ingredient Bins			**$0.00**	$0.00	
Total Equipment Cost			**$1,340,750**	**$446.92**	
Total Buildings and Equipment Cost			**$3,615,750**	**$1,205.25**	
Breeding Stock					
Value of Replacement Sow	$350	/sow	$1,050,000	$350.00	
Value of Replacement Boar	$1,000	/boar	$20,000	$6.67	
Total Breeding Stock Cost			**$1,070,000**	**$356.67**	
Land Value					
Land Investment **800** acres @	**$500**		**$20,000**	**$6.67**	
Less: Rent out **760** acres					
Other Costs					
Site Preparation (included in building costs)			**$0**	$0.00	
Manure Storage			**$72,000**	$24.00	
Total Other Costs			**$72,000**	**$24.00**	
Total Capital Investment			**$4,777,750**	**$1,592.58**	

[1] FOOTNOTE: The number of square feet allocated for buildings and equipment are approximations. Cost per sow for buildings and equipment will vary around the province.

FOOTNOTE: 1 sq.ft. = 0.0929 sq.m; 1 sq.m.= 10.764 sq.ft.; 1 ft.= 0.3048 m

Ration Ingredients & Costs

Ingredients	Price/tonne	Your Cost
Barley	$108	
Corn	$120	
Soybean Meal - 47 %	$315	
Canola Meal - 37%	$183	
Creep Premix	$700	
Sow Micro Premix	$2,550	
Canola Oil	$550	
Whey Powder	$720	
Herring Meal	$1,400	
Limestone	$65	
Phosphorous (16-21)	$465	
Salt - 96%	$120	
L-Lysine HCL	$2,550	
Oats - Steam rolled	$250	
Blood Plasma	$6,500	
Processing Cost		
(Hydro,repairs/maintenance & insurance)	$3.25	
Percent Weight loss due to processing	1.25 %	
Labour Cost	$4.00	

Ration Formulas	Dry Sow (kg)	Nursing Sow (kg)	Boar Ration (kg)	Creep Ration (kg)
Barley	810.20	530.70	810.20	0.00
Corn	0.00	199.00	0.00	114.00
Field Peas	0.00	0.00	0.00	0.00
Soybean Meal - 47 %	0.00	117.00	0.00	121.00
Canola Meal - 37%	138.00	80.00	138.00	0.00
Creep Premix	0.00	0.00	0.00	5.00
Sow Micro Premix	5.00	5.00	5.00	0.00
Canola Oil	10.00	30.00	10.00	25.00
Whey Powder	0.00	0.00	0.00	100.00
Herring Meal	0.00	0.00	0.00	60.00
Limestone	16.50	15.00	16.50	28.40
Phosphorous (16-21)	14.90	16.50	14.90	9.60
Salt - 96%	3.50	4.90	3.50	3.50
L-Lysine HCL	1.90	1.90	1.90	0.50
Oats - Steam rolled	0.00	0.00	0.00	475.00
Blood Plasma	0.00	0.00	0.00	58.00
TOTAL (kg)	1,000.00	1,000.00	1,000.00	1,000.00

Feed Requirement and Cost Summary

	Amount		Ingredient Price	Ration Cost	
Dry Sow & Boar:	(kg)		($ /tonne)	($ /tonne)	Your Cost
Barley	810.2		$108.00	$87.50	
Canola Meal - 34%	138.0		$183.00	$25.25	
Sow Micro Premix	5.0		$2,550.00	$12.75	
Canola Oil	10.0		$550.00	$5.50	
Limestone	16.5		$65.00	$1.07	
Phosphorous (16-21)	14.9		$465.00	$6.93	
Salt - 96%	3.5		$120.00	$0.42	
L-Lysine HCL	1.9		$2,550.00	$4.85	
Total Dry Sow	**1,000.0**	**kg**		**$144.27**	
Adjusted For Weight Loss			1.25 %	$146.07	
Plus Processing Cost			$3.25	$149.32	
Plus Labour Cost			$4.00	**$153.32**	
Nursing Sow:					
Barley	530.7		$108.00	$57.32	
Corn	199.0		$120.00	$23.88	
Soybean Meal - 47 %	117.0		$315.00	$36.86	
Canola Meal - 34%	80.0		$183.00	$14.64	
Sow Micro Premix	5.0		$2,550.00	$12.75	
Canola Oil	30.0		$550.00	$16.50	
Limestone	15.0		$65.00	$0.98	
Phosphorous (16-21)	16.5		$465.00	$7.67	
Salt - 96%	4.9		$120.00	$0.59	
L-Lysine HCL	1.9		$2,550.00	$4.85	
Total Nursing Sow	**1,000.0**	**kg**		**$176.04**	
Adjusted For Weight Loss			1.25 %	$178.24	
Plus Processing Cost			$3.25	$181.49	
Plus Labour Cost			$4.00	**$185.49**	
Creep Ration:					
Corn	114.0		$120.00	$13.68	
Soybean Meal - 47 %	121.0		$315.00	$38.12	
Creep/Starter Premix	5.0		$700.00	$3.50	
Canola Oil	25.0		$550.00	$13.75	
Whey Powder	100.0		$720.00	$72.00	
Herring Meal	60.0		$1,400.00	$84.00	
Limestone	28.4		$65.00	$1.85	
Phorphorous	9.6		$465.00	$4.46	
Salt	3.5		$120.00	$0.42	
L-Lysine HCL	0.5		$2,550.00	$1.28	
Oats - Steam rolled	475.0		$250.00	$118.75	
Blood Plasma	58.0		$6,500.00	$377.00	
Total Creep	**1,000.0**	**kg**		**$728.81**	
Adjusted For Weight Loss			1.25 %	$737.92	
Plus Processing Cost			$3.25	$741.17	
Plus Labour Cost			$4.00	**$745.17**	

Production Cost Worksheet

A. Operating Costs			Your Cost
1. Feed Requirements and Costs			
1.01 Sow Lactation Ration			
	18	days average weaning age	
x	2.35	litters/sow/year	
=	42.3	days lactation	
x	6.0	kg ration/day	
x	$228.00	/tonne ration	
÷	1,000	kg/tonne	
÷	21.87	pigs/sow	
=	**$2.65**	**/pig sold**	
1.02 Sow Gestation Ration			
	365	days /year	
-	42.3	days lactation	
=	323	days gestation	
x	2.3	kg ration /day	
x	$200.00	/tonne ration	
÷	1,000	kg/tonne	
÷	21.87	pigs/sow	
=	**$6.79**	**/pig sold**	
1.03 Boar Ration			
	365	days	
x	2.5	kg ration/day	
x	$200.00	/tonne ration	
÷	1,000	kg/tonne	
x	20	boars	
÷	3,000	sows	
÷	21.87	pigs/sow	
=	**$0.06**	**/pig sold**	
1.04 Creep Feed			
	1.00	kg ration/pig	
x	$962.00	/tonne of creep feed	
÷	1,000	kg/tonne	
x	25.62	pigs born alive/sow/year	
÷	21.87	pigs/sow	
=	**$1.13**	**/pig sold**	

2. Other Operating Costs

2.01 Veterinary Medicine & Supplies

$7.29		/sow professional services
+	$21.83	/sow medication
+	21.87	pigs/sow
=	**$1.33**	**/pig sold**

2.02 Maintenance & Repairs

$1,205.25		/sow building & equipment cost
x	0.55	% repair & maintenance
÷	21.87	pigs/sow
=	**$0.30**	**/pig sold**

2.03 Hydro & Propane

$50,000.00		hydro
+	$30,000.00	propane
+	65,595	pigs marketed
=	**$1.22**	**/pig sold**

2.04 Insurance

$3,615,750.00		buildings & equipment
x	$0.46	/$100 capital
+	100	
÷	65,595	pigs marketed
=	$0.25	/pig sold

$1,070,000		breeding stock
+	$2,295,825	weaners
x	$0.65	/$100 capital
÷	65,595	pigs marketed
=	$0.33	/pig sold
=	**$0.58**	**/pig sold**

2.05 Manure Costs

Haulage	18.00	litres/sow/day
x	$0.002	/litre
x	365	days
÷	21.87	pigs/sow
=	$0.60	/pig sold

Odour control	$10,000.00	total costs
÷	65,595	pigs marketed
=	$0.15	/pig sold
Total =	**$0.75**	**/pig sold**

2.06 Office Supplies

	3,000	number of sows
x	$1.00	fixed rate/sow
+	$500.00	minimum cost
=	$3,500.00	total
÷	3,000	sows
÷	21.87	pigs/sow
=	**$0.05**	**/pig sold**

2.07 Marketing & Transportation

	$0.10	**/pig sold**

2.08 Breeding Costs

	2	services/sow
+	0.18	% rebred
x	$12.00	seman cost/vial
÷	21.87	pigs marketed
=	**$1.20**	**/pig sold**

2.09 Sow Replacement

	$180.00	kg/sow (cull weight)
x	$60.00	/100 kg live
=	$108.00	/sow value of cull
	$350.00	/sow value of replacement
-	$108.00	/sow value of cull
=	$242.00	net replacement cost
x	40.00	% sow culling rate
+	21.87	pigs/sow
=	**$4.43**	**/pig sold**

2.10 Boar Replacement

	225.0	kg/boar (cull weight)
x	$34.00	/100 kg live
=	$76.50	/boar value of cull
	$1,000.00	/boar value of replacement
-	$76.50	/boar value of cull
=	$923.50	net replacement cost
x	50.00	% boar culling rate
x	20	number of boars
+	3,000	number of sows
÷	21.87	pigs/sow
=	**$0.14**	**/pig sold**

2.11 Property Taxes:

	$30,000.00	total taxes	_____
+	65,595	pigs marketed	_____
=	**$0.46**	**/pig sold**	_____

2.12 Interest on Operating Cost:

$$\frac{\text{Subtotal Operating Cost x Farrow-to-Farrow Period}}{365} \times \frac{\text{\% Interest}}{2}$$

	365	days per year	
÷	2.35	litters/sow	_____
=	155	days farrow-to-farrow	_____
			_____
	$21.19	subtotal operating	
x	155	days farrow to farrow	_____
÷	365	days per year	_____
x	8.50	% operating interest rate	_____
÷	2	average	_____
=	**$0.38**	**/pig sold**	_____
			_____

B. Fixed Costs

3. Depreciation: $\frac{\text{Original Cost - Salvage Value}}{\text{Useful Life}}$

3.01 Buildings

	$2,347,000.00	building cost (including earthen manure storage)	
-	$227,500.00	salvage value (building only)	
÷	20	years useful life	
÷	65,595	pigs marketed	
=	**$1.62**	**/pig sold**	

3.02 Equipment

	$1,340,750.00	equipment cost	
-	$134,075.00	salvage value	
÷	10	years useful life	
÷	65,595	pigs marketed	
=	**$1.84**	**/pig sold**	

4. Investment:

$$\frac{\text{(Original Cost + Salvage Value)}}{2} \times \text{Investment Rate}$$

4.01 Land Cost

	$20,000	land investment	
x	5.0	% investment rate	
÷	65,595	pigs marketed	
=	**$0.02**	**/pig sold**	

4.02 Buildings

	$2,347,000.00	building cost (including earthen manure storage)	
+	$227,500.00	salvage value (building only)	
÷	2	average	
x	5.0	% investment rate	
÷	65,595	pigs marketed	
=	**$0.98**	**/pig sold**	

4.03 Equipment

	$1,340,750.00	equipment cost	
+	$134,075.00	salvage value	
+	2	average	
x	5.0	% investment rate	
÷	65,595	pigs marketed	
=	**$0.56**	**/pig sold**	

4.04 Breeding Stock

	$1,070,000.00	value of breeding stock	
x	5.0	% investment rate	
÷	65,595	pigs marketed	
=	**$0.82**	**/pig sold**	

5. Labour

	400	hours/week	
x	52	weeks/year	
x	$12.00	/hour	
+	3,000	sows	
+	21.87	pigs/sow	
=	**$3.80**	**/pig sold**	

Summary of Purchased Feeds Used

Number of Sows	**3,000**
Total Pigs Sold	**65,595**

	Total per Year (tonnes)	Total per Month (tonnes)	Total per Pig (kgs)	Total per Pig (lbs)
Dry Sow	2,226.63	185.55	33.95	74.84
Lactating Sow	761.40	63.45	11.61	25.59
Boar	18.25	1.52	0.28	0.61
Creep	67.62	5.64	1.03	2.27
Total Purchased	**3,073.90**	**256.16**	**46.86**	**103.31**

Summary of Home Feed Ingredients Used

	Total per Year (tonnes)	Total per Month (tonnes)	Total per Pig (kgs)	Total per Pig (lbs)
Barley	0.00	0.00	0.00	0.00
Corn	0.00	0.00	0.00	0.00
Field Peas	0.00	0.00	0.00	0.00
Soybean Meal - 47 %	0.00	0.00	0.00	0.00
Canola Meal - 37%	0.00	0.00	0.00	0.00
Creep Premix	0.00	0.00	0.00	0.00
Sow Micro Premix	0.00	0.00	0.00	0.00
Canola Oil	0.00	0.00	0.00	0.00
Whey Powder	0.00	0.00	0.00	0.00
Herring Meal	0.00	0.00	0.00	0.00
Limestone	0.00	0.00	0.00	0.00
Phosphorous (16-21)	0.00	0.00	0.00	0.00
Salt - 96%	0.00	0.00	0.00	0.00
L-Lysine HCL	0.00	0.00	0.00	0.00
Oats - Steam rolled	0.00	0.00	0.00	0.00
Blood Plasma	0.00	0.00	0.00	0.00
Total Home Grown	**0.00**	**0.00**	**0.00**	**0.00**
Total All Feed	**3,073.90**	**256.16**	**46.86**	**103.31**

For further information contact your local Manitoba Agriculture and Food office.

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